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**Claims**

1. A method of preventing amplitude peaks from appearing in a processed signal that has been generated from at least one baseband signal by one or more signal processing operations, comprising:
- a) subjecting the baseband signal which is to be processed to a first peak cancellation step including:
- deriving from the baseband signal a first estimate for the processed signal, including subjecting the baseband signal to an estimation filtering operation based on a set of filter coefficients;
  - assessing the first estimate to detect amplitude peaks;
  - adjusting the baseband signal to prevent any amplitude peaks detected in the first estimate from appearing in the processed signal; and
- b) subjecting the adjusted baseband signal which is to be processed to at least one additional peak cancellation step including:
- deriving from the adjusted baseband signal a second estimate for the processed signal, including subjecting the baseband signal to an estimation filtering operation based on the set of filter coefficients used in the first peak cancellation step;
  - assessing the second estimate to detect amplitude peaks;
  - further adjusting the adjusted baseband signal to prevent any amplitude peaks detected in the second estimate from appearing in the processed signal.
2. The method of claim 1, wherein one or more of the peak cancellation steps are performed in a forward direction only.
3. The method of claim 1 or 2, wherein in one or more of the peak cancellation steps the estimate for the processed signal is derived by simulating the effects of the one or more signal processing operations performed to generate the processed signal.
4. The method of claim 3, wherein deriving the estimate for the processed signal includes at least one of signal filtering and signal combination.

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5. The method of one of claims 1 to 4, wherein in one or more of the peak cancellation steps the assessment of the estimate for the processed signal includes a threshold decision.
- 5 6. The method of claim 5, wherein the assessment involves a routine that produces a train of output signals at the time positions of peak maxima which are higher than a threshold.
- 10 7. The method of one of claims 1 to 6, wherein in one or more of the peak cancellation steps the baseband signal to be processed is adjusted using a correction signal derived by way of filtering.
- 15 8. The method of claim 7, wherein during a particular peak cancellation step the filtering applied when deriving the estimate for the processed signal differs from the filtering applied when adjusting the signal to be processed.
- 20 9. The method of one of claims 1 to 8, further comprising determining and compensating at least a signal power loss that resulted from one or more of the peak cancellation steps.
- 25 10. The method of one of claims 1 to 9, further comprising subjecting the signal to be processed to at least one clipping step.
- 30 11. The method of one of claims 1 to 10, wherein a plurality of baseband signals in the form of individual carriers are in parallel subjected to a particular one of the peak cancellation steps.
- 35 12. The method of claim 11, wherein during the particular peak cancellation step a combined estimate is derived for the plurality of carriers and wherein the assessment is based on the combined estimate.
13. A computer program product comprising program code portions for performing the steps of one of claims 1 to 12 when the computer program product is run on a computing device.
14. The computer program product of claim 13, stored on a computer readable recording medium.

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15. A peak cancellation stage (32, 32') for preventing amplitude peaks from appearing in a processed signal that has been generated from at least one baseband signal by one or more signal processing operations, comprising:
- a first peak cancellation unit (32) including:
    - a) an estimating element (56) for deriving from the baseband signal to be processed a first estimate for the processed signal, wherein the estimating element (56) comprises an estimation filter (68) operating based on a set of filter coefficients;
    - b) a detector (58) for assessing the first estimate to detect amplitude peaks;
    - c) an adjusting element (64) for adjusting the baseband signal to prevent any amplitude peaks detected in the first estimate from appearing in the processed signal;
  - at least one additional peak cancellation unit (32') arranged in a signal path behind the first peak cancellation unit (32) and including:
    - a) an estimating element for deriving from the adjusted baseband signal a second estimate for the processed signal, wherein the estimating element comprises an estimation filter operating based on the same set of filter coefficients like the first peak cancellation unit (32);
    - b) a detector for assessing the second estimate to detect amplitude peaks;
    - c) an adjusting element for further adjusting the adjusted baseband signal to prevent any amplitude peaks detected in the second estimate from appearing in the processed signal.
16. The peak cancellation stage of claim 15, wherein one or more of the peak cancellation units (32) have a first signal branch (50) including at least the estimating element (56) and the detector (58) and a second signal branch (52) arranged in parallel to the first signal branch (50) and including a delay element (54).
17. A transmitting device comprising the peak cancellation stage (32, 32') according to claim 15 or 16.